

**REMARKS**

Claims 1, 3, 5-8, 10, 11, 13-15, 17-22, 24, 26, 28-31, 33, 35, and 37-40 are all the claims pending in the Application. The Examiner indicates that the Restriction of February 19, 2008 is withdrawn and that all pending claims are currently being examined.

**35 U.S.C. § 101**

Claims 24, 26, 28-31, 33, 35 ,37, and 39 are rejected under 35 U.S.C. § 101 as allegedly directed to non-patentable subject matter.

With this Amendment, Applicant amends claims 24, 26, 28-31, 33, 35 ,37, and 39 in order to address the Examiner's concerns. Applicant submits that the claims are currently directed to patentable subject matter and respectfully requests that the rejection of these claims be reconsidered and withdrawn.

**35 U.S.C. § 103(a)**

Claims 1, 3, 24, 26, 33 and 35 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth (U.S. Patent 6,996,323) in view of Chang (U.S. Publication 2003/0012509). Claims 5, 28, and 37 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth in view of Chang and Shimokawa (U.S. Patent 6,445,471). Claims 6, 10, 13, 29, and 38 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth in view of Shimokawa. Claims 7, 21, 30, and 39 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth in view of Chang and Kawasaki (U.S. Patent 6,288,836). Claims 8, 11, 14, 22, 31, and 40 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth in view of Kawasaki. Claim 15 is rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth in view of Chang and Shimomura (U.S. Publication 2002/0126372). Claim 18 is rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth in view of Shimokawa and

Shimomura. Claim 19 is rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth in view of Chang, Kawasaki, and Shimomura. Claim 20 is rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Scarth in view of Kawasaki and Shimomura.

Applicant respectfully traverses these rejections.

**Claims 1, 3, 24, 26, 33, and 35**

With this Amendment, Applicant amends independent claims 1, 3, 24, 26, 33, and 35 as shown. These amendments are fully supported in the originally-filed application at least by Figure 4 and the discussion thereof. Applicant submits that neither Scarth nor Chang, nor any reasonable combination thereof, discloses or suggests at least: “a first optical signal detector for detecting the presence or absence of an optical signal ... based on ... whether an optical signal in the channel is equal to or lower than a first no-signal criterion level; ... and a second optical signal transmission detector for detecting, if the first optical signal transmission detector detects the presence of the optical signal, whether an attenuator for attenuating the optical signal in the channel is faulty based on a determination of whether the optical signal in the channel is equal to or lower than a second no-signal criterion level.” (claim 1, as amended, *see also analogous limitations in claims 3, 24, 26, 33, and 35*)

Figure 2 of Scarth illustrates conventional apparatus including a first set of tap couplers and tap monitors 201-208, and a second set of tap couplers and tap monitors 209-216. However, there is no teaching or suggestion that the first set or the second set of tap couplers and tap monitors make detections based on a first no-signal criterion level and a second no-signal criterion level, or that the second set of tap couplers and tap monitors detects whether an attenuator is faulty. Neither Scarth nor Chang provides any teaching or any need for or benefit of

a device to determine, based on an optical power signal level in a channel, whether an attenuator associated with that channel is faulty. Furthermore, Scarth specifically discusses the advantages of less hardware, reduced power consumption, reduced space, and simplified apparatuses. (col. 1, lines 40-43; col. 2, lines 33-43; col. 4, lines 40-47) Therefore, one of skill in the art would not be motivated to modify the apparatus of Scarth to perform such a function absent any discussion of the benefits or such a function.

Therefore, Applicant submits that claims 1, 3, 24, 26, 33, and 35 are patentable over the cited references and that claim 15 is patentable at least by virtue of its dependency. Applicant respectfully requests that the rejection of claims 1, 3, 15, 24, 26, 33, and 35 be reconsidered and withdrawn.

**Claims 5, 6, 10, 13, 17, 18, 28, 29, 37, and 38**

Applicant submits that none of Scarth, Chang, Shimokawa, and Shimomura, either alone or in reasonable combination, disclose or suggest at least: “a spectrum analyzer for analyzing the spectrum of the multiplexed optical signal before being demultiplexed by the demultiplexer”.  
(claims 5 and 6, *see also analogous limitations in claims 28, 29, 37, and 38*)

The Examiner asserts that one of skill in the art at the time of the present invention would have modified Scarth “using a spectrum analyzer and photodetectors arrangement like that of Shimokawa et al., but with the spectrum analyzer before the optical demultiplexer (AWG), considering that Scarth’s tap couplers for channel measurement are located upstream from the attenuators, to provide the benefit of analyzing the incoming power level of the single WDM signal before the demultiplexer adds inherent insertion losses that affect the spectrum.” (Office Action, page 11) Applicant submits that the Examiner is mistaken.

One of skill in the art at the time of the present invention would have understood that the price of a spectrum analyzer was significantly more expensive than the price of photo diodes for the total number of wavelengths. Further, a spectrum analyzer is significantly over-engineered as compared with the VOA control function already achieved by Scarth. Therefore, one of skill in the art at the time of the present invention, would never have modified the Scarth device to make it significantly more expensive and significantly more complex to achieve a function which Scarth fails to disclose as necessary or even desirable. As noted above, Scarth specifically discusses the advantages of less hardware, reduced power consumption, reduced space, and simplified apparatuses.

Therefore, Applicant submits that claims 5, 28, and 37 are patentable over the cited art and that claims 10, 13, 17, and 18 are patentable at least by virtue of their dependencies. Applicant respectfully requests that the rejection of claims 5, 6, 10, 13, 17, 18, 28, 29, 37, and 38 be reconsidered and withdrawn.

**Claims 7, 8, 11, 14, 19-22, 30, 31, 39, and 40**

Applicant submits that none of Scarth, Chang, Kawasaki, and Shimomura disclose or suggest at least “a supervisory signal receiver for receiving a supervisory signal indicating whether there is transmission of at least part of the optical signals of the respective channels which form the multiplexed optical signal input to the demultiplexer”. (claims 7 and 8, *see also analogous limitations in claims 30, 31, 39, and 40*)

As previously submitted in the Amendment of October 3, 2008, regarding claims 8, 31, and 40, Applicant submits that the supervising circuit 56 of Kawasaki detects the number of

channels of the WDM signal, but does not determine whether an optical signal was transmitted to a particular channel.

In the current Office Action, the Examiner notes that Kawasaki, col. 9, lines 1-4 describes that according to an embodiment, “the output level in each channel of the WDM signal light can be automatically controlled to become constant”. Thus, the Examiner appears to assert that based on the disclosure of Kawasaki, it is inherently taught that the Kawasaki supervising circuit can determine whether an optical signal was transmitted to a particular channel. Applicant submits that the Examiner is mistaken.

This merely recites that the output of each channel can be controlled. This does not necessarily require that the supervising circuit determine whether an optical signal was transmitted to a particular channel. Rather, Kawasaki specifically describes that “The supervising circuit 56 detects *the number of channels* of the WDM light”. (col. 8, lines 49-53) Thus, the supervising circuit clearly detects *how many* channels are receiving the WDM light (i.e. a total number of wavelengths transmitted and received), and *not* whether an optical signal is specifically transmitted to any particular wavelength or channel.

Therefore, Applicant submits that claims 7, 8, 30, 31, 39, and 40 are patentable over the cited art and that claims 11, 14, and 19-22 are patentable at least by virtue of their dependencies. Applicant respectfully requests that the rejection of claims 7, 8, 11, 14, 19-22, 30, 31, 39, and 40 be reconsidered and withdrawn.

### **Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

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